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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference A3-069PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/US 03/0528	International filing date (day/month/year) 26.09.2003	Priority date (day/month/year) 03.10.2002
International Patent Classification (IPC) or both national classification and IPC G06K13/08		
Applicant MOLEX INCORPORATED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application

Date of submission of the demand 07.04.2004	Date of completion of this report 10.02.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Arenz, R Telephone No. +49 89 2399-8177 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/US 03/30528**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-10 as originally filed

Claims, Numbers

1-7 filed with telefax on 06.10.2004

Drawings, Sheets

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-7
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

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Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:
D1: WO 02/07269 A (TOMITA MITSUHIRO ;YAMAGUCHI TOMISABURO (JP);
MOLEX INC (US)) 24 January 2002 (2002-01-24)
D2: EP-A-1 193 807 (HIROSE ELECTRIC CO LTD) 3 April 2002 (2002-04-03)
D3: US-A-6 068 516 (CHANG JEN-JOU) 30 May 2000 (2000-05-30)
D4: US-A-6 116 950 (KOSEKI YOSHITSUGU) 12 September 2000 (2000-09-12)
2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The subject-matter of claim 1 concerns only a memory card connector and not a combination the memory card with a memory card having a slot in the top of the card. Therefore, prior art disclosing a memory card connector having a wrong insertion-proof projection suitable for extending in a slot of a memory card , such as D1,D2,D3 or D4 has to be consider.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):
"...1. A memory card connector (10), comprising:
an insulating housing (12) defining a front receptacle area communicating with an interior cavity (suitable) for receiving a memory card (22);
a plurality of terminals (24) mounted on the housing in a side-by-side array transversely across a rear of the housing, terminals having contact portions (24a) at a rear of the cavity (suitable) for engaging contacts on a top side of the memory card (see fig. 12);
a sheet metal shell (14) covering at least a portion of the insulating housing and including a cover plate (26) overlying at least a portion of said cavity, the sheet metal shell having a wrong insertion-proof projection (94; cf. fig. 1;page 9 lines 18-22) formed out of said cover plate and extending downwardly into the cavity and (being suitable to extend) into a slot in the top of the memory card when the card is properly

inserted into the cavity, the projection (94) preventing an erroneously inserted memory card from engaging the contact portions of the terminals, and the projection being bent downwardly (94; cf. fig. 1; page 9 lines 18-22)..."

The subject-matter of claim 1 therefore differs from this known memory card connector in that:

"...the projection being bent downwardly and back upwardly into an elbow-shaped cross-sectional configuration to prevent scarring or cracking of the memory card (24) when erroneously inserted into the cavity..."

The problem to be solved by the present invention may therefore be regarded as to prevent scarring or cracking of a memory card when erroneously inserted.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

The features, according to which "...the projection being bent downwardly and back upwardly into an elbow-shaped cross-sectional configuration..." have already been employed in a similar memory card connector.

Document D3 (cf. fig. 1,2, 3B,4; col.2, lines 49-56) discloses a memory card connector having a wrong insertion-proof projection (anti disorientation means 3) being bent downwardly ("*The anti-disorientation means 3 is formed by stamping and bending the cover 2 whereby the anti-disorientation means 3 essentially is a tang projecting downward from the cover 2...*") and back upwardly (see fig. 3B; "...The anti-disorientation means 3 is formed with a **curved portion 31...**") into an elbow-shaped cross-sectional configuration.

It would be obvious to the person skilled in the art to apply these features with corresponding effect to a memory card connector according to document D1, thereby arriving at a memory card connector according to claim 1.

Thus, the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

3. Dependent claims 2-7 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of

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inventive step, since the additional features of claims 2-7 concerns slight constructional changes which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.

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CLAIMS

1. A memory card connector (14), comprising:
2 an insulating housing (16) defining a front receptacle area (24) communicating with
an interior cavity (22) for receiving a memory card (24);
4 a plurality of terminals (20) mounted on the housing in a side-by-side array
transversely across a rear (44) of the housing, the terminals having contact portions (20b) at a rear
6 of the cavity for engaging contacts (38) on a top side (32) of the memory card;
a sheet metal shell (18) covering at least a portion of the insulating housing and
8 including a cover plate (66) overlying at least a portion of said cavity, the memory card connector
characterized by the sheet metal shell having a wrong insertion-proof projection (78) formed out
10 of said cover plate (66) and extending downwardly into the cavity (22) and into a slot (40) in the
top of the memory card when the card is properly inserted into the cavity, the projection (78)
12 preventing an erroneously inserted memory card from engaging the contact portions (20b) of the
terminals (20), and the projection being bent downwardly and back upwardly into an elbow-
14 shaped cross-sectional configuration to prevent scarring or cracking of the memory card (24)
when erroneously inserted into the cavity.

2. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally U-shaped configuration.

3. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally L-shaped configuration.

4. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally J-shaped configuration.

5. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally V-shaped configuration.

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2 6. The memory card connector of claim 1 wherein said sheet metal shell (18) includes a pair of depending opposite side walls (68,70) integral with opposite longitudinal edges of said cover plate (66).

2 7. The memory card connector of claim 6 wherein said side walls (68,70) include mounting tabs (72) bent outwardly at bottom edges of the walls for mounting the connector on a circuit board.